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Edelsbrunner, Herbert

Geometry and topology for mesh generation. 1st paperback ed.

Cambridge Monographs on Applied and Computational Mathematics 7. Cambridge: Cambridge University Press (ISBN 0-521-68207-X/pbk). xii, 177 p. (2006).

Publisher's description: The book combines topics in mathematics (geometry and topology), computer science (algorithms), and engineering (mesh generation). The motivation for these topics is the difficulty, both conceptually and in the technical execution, of combining elements of combinatorial and of numerical algorithms. Mesh generation is a topic where a meaningful combination of these different approaches to problem solving is inevitable. The book develops methods from both areas that are amenable to combination, and explains recent breakthrough solutions to meshing that fit into this category. This book emphasizes topics that are elementary, attractive, useful, interesting, and lend themselves to teaching, making it an ideal graduate text for courses on mesh generation. See the review of the original edition (2001; Zbl 0981.65028).

Classification: N75 G95 M55

Keywords: textbook; computing methodology and applications; grid and mesh generation; combinatorial topology; numerical algorithms; Delaunay triangulations; surface simplification; Delaunay tetrahedrizations
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